

The Highway In The Sky

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Story Guide and Operating Procedures





The Highway In The Sky

A University of Disneyland Guide for
Retlaw Monorail Operators
June, 1966

Introduction

Welcome aboard the Disneyland-Alweg Monorail System. This "Highway in the Sky" is designed to give guests an experience on the efficient, fast-moving transportation of the future.

The Monorail is not only a ride on a train, but it also serves as a transportation system to carry guests to and from the Disneyland Hotel.

Your appearance, your attitude and your efficiency are all important in giving the guest a lasting impression of the Monorail.

To tell you the story behind the attraction and to better familiarize you with the operating procedure, we have prepared this manual.

Your foreman and supervisors are on the job to instruct you and to supervise your work. In addition to your accepting training and direction, we would like you to ask questions whenever there is something which is not clear to you.

We hope you enjoy your experience working on the Disneyland-Alweg Monorail System.

University of Disneyland



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The Story Behind The Story

The Disneyland-Alweg Monorail System was unveiled at Disneyland June 14, 1959 by Walt Disney and Vice President Richard M. Nixon. Mrs. Nixon and their daughters, Tricia and Julie, also participated in the ribbon-cutting ceremonies, which were viewed by a national television audience watching the special "Disneyland '59" TV show. Since that time, the Monorail trains have carried most of the heads of state — kings and queens, presidents and prime ministers — who have visited Disneyland, as well as millions of other Disneyland visitors from every state and nearly every nation.

The Disneyland-Alweg Monorail was the first passenger-carrying monorail in the Western Hemisphere to operate daily. Walt Disney had been interested in installing a practical monorail system at Disneyland from the time he first launched actual plans for the Park.

During the planning period, Walt's engineering staff did extensive research, and investigated several prospective designs. While on a trip to Europe in the summer of 1957, the engineering group examined the experimental monorail developed by the Alweg Company near Cologne, Germany. Alweg had been operating its test monorail in Germany since 1952 on a long curve, approximately one mile in length. After thorough investigation, the engineers recommended this style monorail to Walt because it offered the best prospects for economy, stability, and all-around practicality, not only for Disneyland, but for municipal transportation systems in general.

Disneyland and Alweg joined together in the summer of 1958 to develop the basic system into a working prototype for operational use at Disneyland. As a result, the monorail at Disneyland is an Alweg system. The trains were designed and built

by WED Enterprises at the Walt Disney Studio in Burbank.

The design of the train cars, including their motive power and braking and safety systems, could be utilized by any metropolitan transit system. For the city monorail, however, the cars would have to be larger to provide for baggage, mail, and standing room.

The original monorail system at Disneyland which opened in 1959 included two trains, one blue and one red, and .6 mile of track. Constant refinement has resulted in many improvements, and unscheduled maintenance time has been cut from approximately 68 hours for the first year to less than nine hours in the year just ended.

In June, 1961, the Monorail was extended to the Disneyland Hotel. This made it the first Monorail in America to run adjacent to a major highway (Harbor Boulevard) and to cross a city street (West Street). A gold train was added with four cars and an additional car was added to the red train and to the blue train, increasing the capacity of each by 22 percent. The total length of the system is now 12,300 feet — nearly 2½ miles.

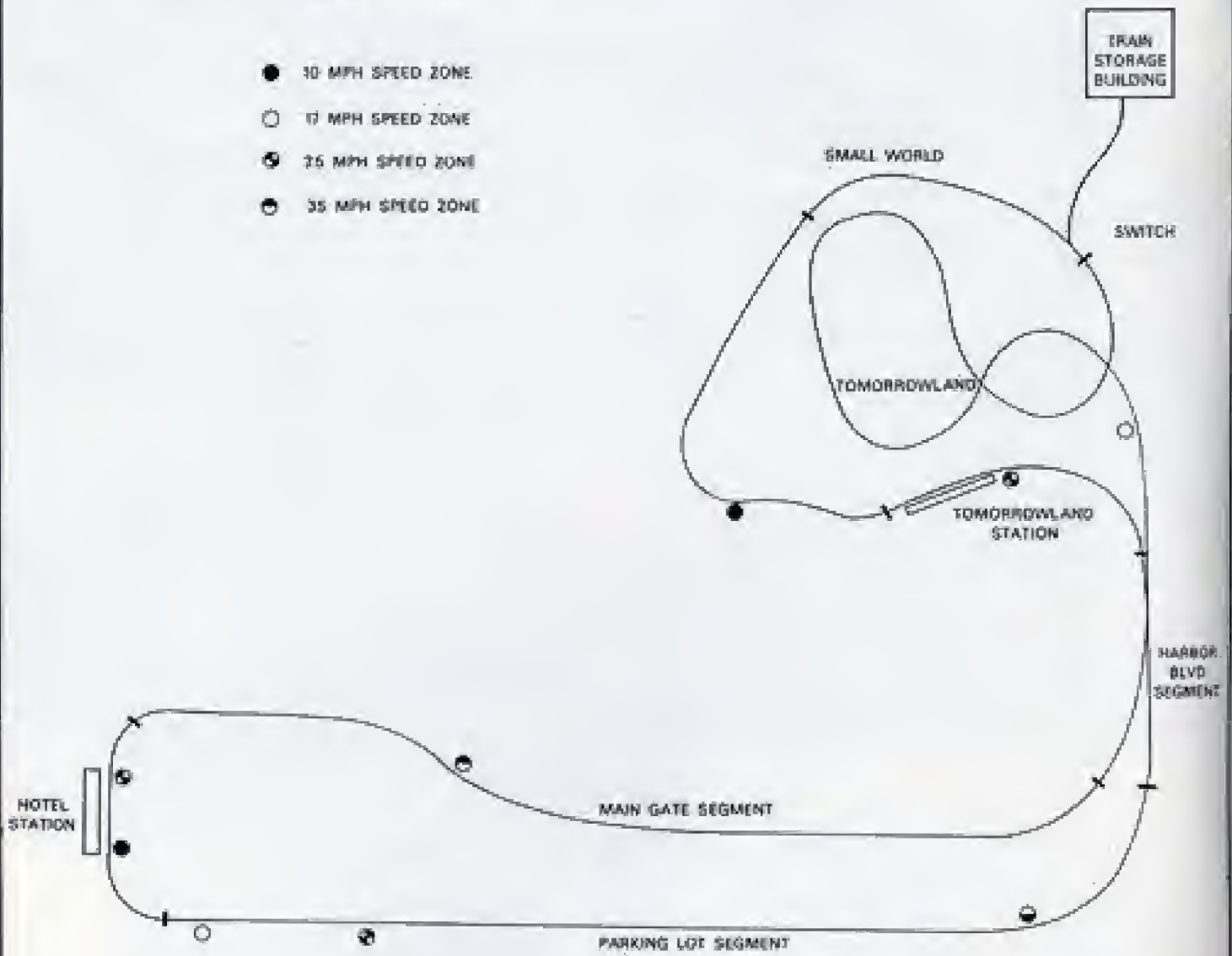
The Monorail trains are electrically powered, operating on 600 volts of direct current transmitted along a pair of copper and steel bus-bars mounted on the right side of the beam. Each train is powered by four .55 horsepower direct current traction motors. For use here at Disneyland, the Monorail system has been designed and engineered for a top running speed of 35 miles per hour (across the Disneyland Parking Lot only).

The concrete beamway or "Highway in the Sky" is composed of pre-cast I-section girders. They were cast in steel forms that can be adjusted to produce either straight beams or curving concrete girders.

To date, the blue train has traveled 195,227 miles during its 16,303 hours of operating time; the red train 178,066 miles in 14,880 hours; and the gold train 157,573 miles in 11,342 hours. Combined, the three Monorail trains have carried more than 22 million guests from the opening in 1959 to May of 1966.

THE DISNEYLAND-ALWEG MONORAIL SYSTEM
BEAMWAY MAP

- 10 MPH SPEED ZONE
- 17 MPH SPEED ZONE
- ◐ 25 MPH SPEED ZONE
- ◑ 35 MPH SPEED ZONE





The Disneyland-Alweg Monorail System

The opportunity to ride on a high-speed, all-electric monorail train does not come often for most people.

Here at Disneyland we give our guests that opportunity at a very nominal cost, and we owe it to them to make this experience a new and exciting one.

The Monorail attraction is divided into distinct segments, each one comprising many different aspects. Because each segment is so varied, guests will ask many questions which you should be able to answer.

In this section we outline each segment of the Disneyland-Alweg Monorail System and give you as much information as possible about each one.

TOMORROWLAND STATION SEGMENT

The Tomorrowland Station of the Disneyland-Alweg Monorail System is one of two boarding points for guests riding over the "Highway in the Sky" aboard one of the silent, all-electric, high-speed Monorails. Guests approaching the waiting area prior to the entrance turnstiles can see a curious palm-like plant which is, in effect, a living fossil. Its relatives existed in the Mesozoic Period some two hundred million years ago.

After passing through the turnstiles, guests are taken to the elevated station platform by way of a moving sidewalk, or speedramp. This ramp was developed by the Stephens-Adamson Company and carries guests swiftly and safely to the platform in 45 seconds.

Directly beneath the Monorail System is the home port of the Disneyland Submarine Fleet, the eighth largest submarine fleet in the world. The submarine lagoon holds nine million gallons of water and through its crystal-clear surface guests waiting on the Monorail platform can see unique coral formations and various forms of sea life.

Looking out over Tomorrowland from the Monorail platform, other adventures and attractions can be seen in a wide panorama.

HARBOR BOULEVARD SEGMENT

Once aboard the Monorail, passengers leave Tomorrowland and the Park as the train crosses over the berm and begins to follow a route alongside Harbor Boulevard, one of Orange County's major thoroughfares. Many restaurants and motels line the boulevard parallel to the Monorail beamway and provide services both in eating facilities and accommodations.

Beneath the beamway, oleander plants border Harbor Boulevard and the Disneyland Parking Lot. They were selected because they grow rapidly and can be trained in various forms, such as shrubs, hedges or trees.

As the train turns west from Harbor Boulevard, it passes the Disneyland marquee, marking the entrance to the Parking Lot. This marquee lists Disney-

land's operating hours and information about any special entertainment nights or groups appearing in the Park.

PARKING LOT SEGMENT

As the train continues its trip to the Disneyland Hotel, guests are carried across the 125-acre parking area, which can accommodate over 11,000 cars at full capacity.

The Parking Lot is divided into 14 different sections, each one with a different capacity to fit into the contour of the area in which it is located.

Blue translucent panels have been placed on the underside of various sections of beamway to serve as a protection against any oil or condensation dripping from the trains onto passing cars.





HOTEL SEGMENT

Crossing West Street, the train approaches the Disneyland Hotel where guests may disembark and, by having their hands stamped, re-board the Monorail at their convenience anytime that same day.

Since it really takes several full days to see the complete Disneyland show, an ideal spot for an

intermission is this modern hotel with spacious convention facilities and the finest in food and entertainment. The Hotel has year-round resort facilities which include over 600 rooms, a shopping arcade, an olympic-sized swimming pool, miniature golf course, driving range, and a nine-hole, three-par golf course.

MAIN GATE SEGMENT

After leaving the Hotel Station for the return trip to Tomorrowland, the Monorail carries guests past Disneyland's newest "land," New Orleans Square, an authentic re-creation of the golden years of New Orleans as it existed a century ago. Another new addition to this area is the Pirates of the Caribbean attraction, where guests board flat-bottomed boats for a Bayou voyage. Here they meet the world's most famous and infamous pirates and adventurers as they sack and burn a city along the Spanish Main.

Approaching the Main Gate, the Main Street Station of the Santa Fe and Disneyland Railroad comes into view. This station at Disneyland's Main Entrance overlooks a typical turn-of-the-century Main Street in any small town in America. The Santa Fe and Disneyland Railroad is the grandfather and forerunner of the Monorail System.

On the front side of the hill on which the train station is located, is a floral portrait of Mickey Mouse. It takes 2,600 flowers in the summer and 3,200 flowers in the winter to create Mickey's laughing face.

Just before reentering the Park, the Monorail passes the buildings which house the Grand Canyon and Primeval World shows. These attractions are viewed by guests riding aboard any one of the Santa Fe and Disneyland Railroad trains. From these trains, passengers first view the Grand Canyon, a dramatic sunrise-to-sunset panorama depicting the Grand Canyon as you would see it today from the South Rim. All the animals and trees are typical of those actually found at the Grand Canyon.

Leaving the Canyon, the trains carry you into another new Disneyland adventure, the Primeval World. Here you have traveled millions of years back in time to an age when huge dinosaurs thundered over the land and ruled the swamps and marshes. These huge brontosaurus, tyrannosaurus and other life-size "Audio-Animatronic" creatures actually roamed the area we now call the Grand Canyon in prehistoric times, eons ago.

The new Administration Building flanks both sides of the Primeval World and houses such offices as Operations, Wardrobe, Security, Personnel, and the University of Disneyland.





REENTERING THE PARK AND TOMORROWLAND SEGMENT

Reentering the Park, the Monorail reaches its highest point, 31 feet, and affords a spectacular view of the Tomorrowland area. Below the Monorail beamway winds the Autopia, "freeway of the future" and the beautiful submarine lagoon. Towering high above the entire scene is the Matterhorn Mountain with its two bobsled runs. This mountain is 147½

feet high and is 1/100 scale of the real Matterhorn in Switzerland.

Passing the Richfield Eagle marking the entrance to the Fantasyland Autopia, guests are carried into the area of the Disneyland Naval Yard, home port and rehabilitation center for the Disneyland Submarine Fleet. From here, the beamway crosses over Disneyland's "Roof Garden," where all the trees and vegetation are growing in a thin layer of soil atop the concrete roof of the Submarine Caverns. Evergreen Ash, Monterey Pine and Silk-Oak are some of the trees that border the beamway on both sides.



SMALL WORLD SEGMENT

At the far north end of Tomorrowland, the Monorail beamway spur track can be seen turning off to the right. This is the switch point for the beamway to take trains off the main line and into the Train Storage Building. This building is where the Monorails and the Santa Fe and Disneyland trains are stored, cleaned and maintained.

As the train turns toward the Matterhorn Mountain, Fantasyland's newest attraction, "It's A Small World" comes into view. Here, boat riding visitors can meet the children of the world. After a two year "road show" at the New York World's Fair, where it was enjoyed by ten million people, this attraction has been enlarged by nearly one-third for its new home in Disneyland.

Dressed in the festive costumes of many lands, 300 children come to life through the magic of "Audio-Animatronics," joining animals and toys to sing and dance in colorful international scenes.

The exterior of the Small World building provides a spectacular backdrop for much of Fantasyland. Guests will recognize shapes built onto this facade that recall familiar symbols of many nations. Here, too, the 30-foot-high clock that smiles a greeting to everyone actually performs the time every 15 minutes throughout the day.

The landscaping below the facade, where guests board boats for their happy cruise, is called a Topiary Garden. The sculptured animals who live there are actually all living plants. The art of training living trees and shrubs into recognizable shapes as they grow is called topiary, a centuries-old art rarely practiced today.

ENTERING TOMORROWLAND STATION

As the Monorail rounds the Matterhorn, the beamway reaches its lowest point—five feet. The train comes close enough to the waterfalls for the guests to actually feel the spray from the water.

The plantings used on the mountain are comprised of Colorado Spruce, European Birch, Chinese Tallow Trees, Juniper, Japanese Honeysuckle and assorted annual flowers. This varied assortment of vegetation produces an alpine scene similar to many found in the Swiss Alps.

When the train stops in the Tomorrowland Station, guests leave the platform by way of the moving speedramp, which transports them back to the ground level.



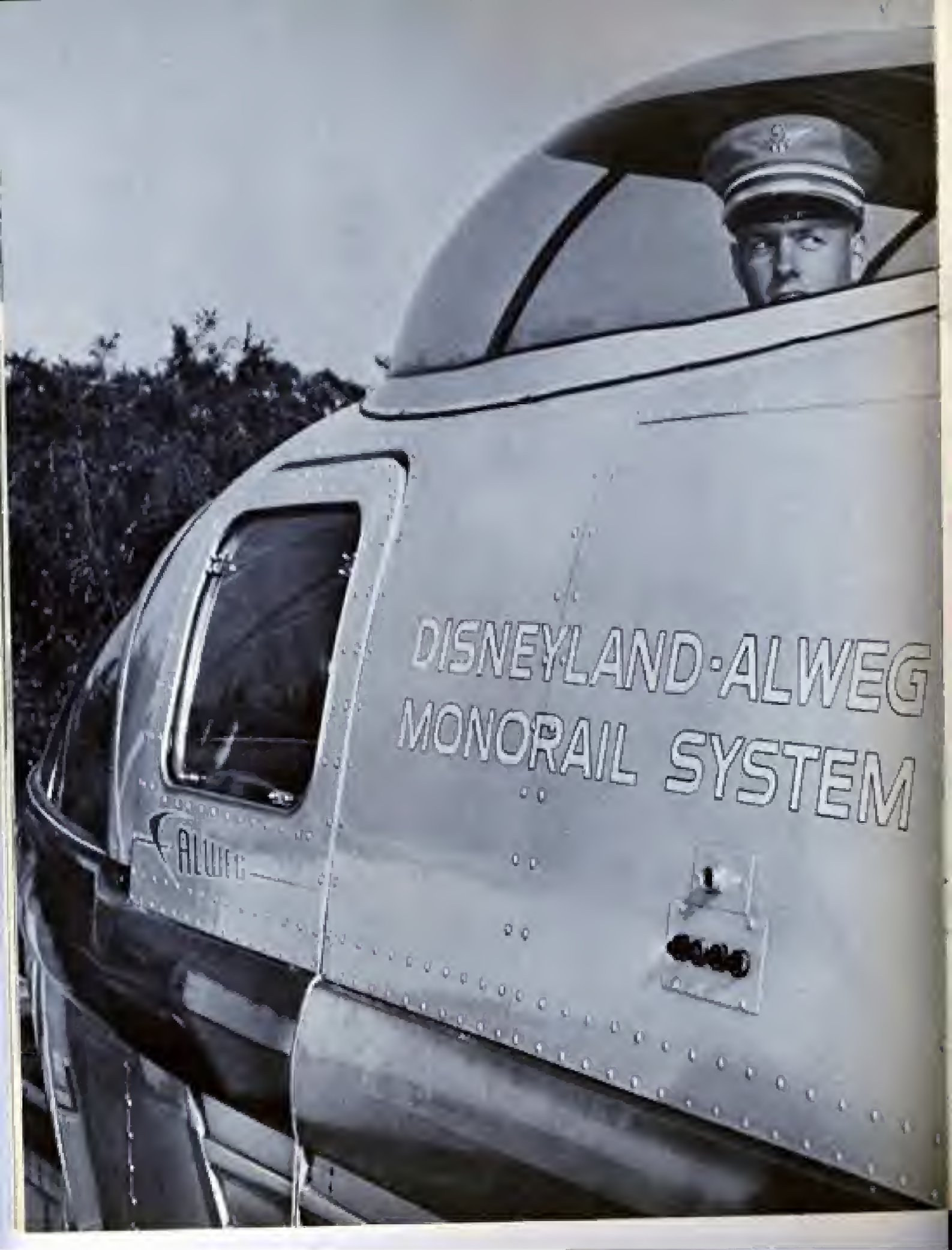


Operating Procedures

The Disneyland-Alweg Monorail System is well known for its efficient, smooth-running operation and excellent safety record. Here pinpoint accuracy and rigid adherence to procedures are

essential because the safety of the guests and the equipment is so important.

In this section of the book we outline the procedures for the Monorail which must be followed at all times. This can be done only if you thoroughly understand these procedures and the reasons for them.



DISNEYLAND-ALWEG
MONORAIL SYSTEM

ALWEG

OPERATING THE MONORAIL

One of the most important duties of an operator working on the Disneyland-Alweg Monorail System is operating the train. The operator at the controls is called a pilot. A complete knowledge of the Monorail is necessary if you are to perform your job as a pilot successfully. This description is designed to give you an overall summary of driving procedures, and takes you step by step through a complete trip.

DEPARTING TOMORROWLAND STATION. When you are in the pilot's seat and ready to depart from the Tomorrowland Station, you must:

1. Turn the test-run switch to the run position.
2. Check the "door closed" and "ready" lights for green.
3. Make a visual check of all switches and meters.
4. Wait for the "go" signal from the foreman.

When the doors are closed and the other trains are in position, the foreman will give the "go" signal. This will be done, however, only when the guests exiting are safely away from the train. You acknowledge the signal by giving two rapid honks on the horn. You must then:

- Check your green lights (there should be three).
- Engage the deadman control.
- Slowly push the accelerator arm all the way forward.
- Press the spiel button.

As you are leaving the station, you must look back at the platform until the tail cone is well clear. Hold full acceleration until you reach the first red paddle at the rectifier break, or 25 m.p.h. Then bring the accelerator arm back to the neutral position.

At the green paddle designating the end of the rectifier break, engage the deadman and push the accelerator arm forward until you are pulling 100 amps power to maintain your speed of 25 m.p.h.

You should always be aware of the locations of the other trains whenever there is more than one Monorail operating on the beamway.

When the train enters the 35 m.p.h. speed zone opposite the Parking Lot entrance, the green speed zone light will go on and full power should be applied.

Maintain 35 m.p.h. until the train is opposite the Section "J" Parking Lot sign. Then bring the accelerator arm to the neutral position and coast to the Section "H" sign. Adjacent to the Section "H" sign, apply dynamic braking. This is done by pulling back on the accelerator arm to the position between neutral and air braking.

The train should be traveling 17 to 20 m.p.h. when crossing West Street. The yellow speed zone light will come on, indicating the 20 m.p.h. zone.

After rounding the turn coming into the Hotel Station, apply five to ten pounds of steady brake pressure to slow the train. A red 10 m.p.h. speed zone light will appear as you enter the station and you should bring the train to a smooth and gradual complete stop with the driver's seat across from the second grey wooden panel.

Immediately upon stopping, turn the test-run switch to the test position and assume your position on the platform to help with the loading operation. Be back in the train ready to go before the last door is closed.

DEPARTING HOTEL STATION. When you are back in the driver's seat, the procedure for departing the Hotel Station is the same as in Tomorrowland.

1. Turn the test-run switch to the run position.
2. Check the "door closed" and "ready" lights for green.
3. Check forward-reverse switch for green.
4. Make a visual check of all switches and meters.
5. Wait for the "go" signal.

When you receive the signal, acknowledge with two honks on the horn, engage the deadman control and slowly push the accelerator arm all the way forward. As you depart the station, look back until the tail cone is well clear of the platform.

When there is more than one train operating, you will have to make a radio transmission reporting your train as departing the Hotel Station. Then clear the channel.

Once you have left the Hotel platform, accelerate to a speed of 25 m.p.h. and let off to the neutral position. Immediately re-accelerate to 100 amps to maintain 25 m.p.h. The blue speed zone light will

be on as you are doing this.

At the "S" turn before the Main Entrance to the Park, the green speed zone light will come on. Accelerate to 35 m.p.h. and maintain this speed until the nose cone of the train is over the Harbor Gate Employees' Entrance. Then bring the accelerator arm back to the neutral position and coast into the Park.

As you let off the accelerator, radio your position by reporting the train over the Harbor Gate. Then clear the channel. This transmission must be made whenever there is more than one train operating.

Do not accelerate or brake as you go over the rectifier change between the red and green paddles.

The train should be traveling under 20 m.p.h. as you enter the Park and the yellow speed zone light will go on.

As a safety precaution, sound the horn briefly over the Autopla track prior to the Submarine Lagoon.

When the train begins to gain speed, apply smooth braking until the speed levels off at 17 m.p.h. Then re-accelerate to 100 amps and sound the horn over the Submarine Lagoon.

As the train begins to climb the hill, accelerate to full. Hold it at full power until the train reaches the crest of the hill, then let off to the neutral position. Sound the horn twice as soon as you let off the power. Then give the Park closing spiel over the PA system.

When the speed of the train begins to drop, accelerate to 100 amps so that the train will be traveling 17 m.p.h. over the switch.

As soon as the Tomorrowland platform comes into view, check to see if it is clear of other trains. If there is a train in the station, stop your train between the Richfield eagle and the Matterhorn chalet. If the station is clear, continue acceleration to 17 m.p.h. Sound the horn after passing the bobbed loading zone and as the train rounds the Matterhorn, brake smoothly to observe the 15 m.p.h. speed zone.

At the reverse "S" curve, the train should be going 10 m.p.h. When entering the Tomorrowland Station, begin applying a gradual smooth brake pressure, stopping the train with your head even with the second grey pole at the front end of the platform.

Immediately on stopping, turn the test-run switch to the test position and help with the unloading and loading procedure.

DRIVING DURING INCLEMENT WEATHER. When the beamway is wet due to bad weather, extreme care must be exercised in driving the train. When leaving the station accelerate very slowly. If the speedometer jumps, this indicates that the wheels have started to spin. Let off immediately to the neutral position and start over.

When you are entering the stations, begin braking sooner than you normally would. You should be checking your motor meters and speedometer frequently during the trip.

Operating Procedures

TOMORROWLAND STATION

TICKET POSITION. The operator at the turnstile is the official host for the Monorail and it is this person's responsibility to greet the guests and receive their tickets. In addition to accepting the various attraction media, the operator must also, by use of the microphone, inform the guests of the ticket needed and direct them to both the left and right entrances.



The number of guests per load will be designated via the intercom and each group will be started through the turnstile as the operator on the platform opens the train doors.

Strollers and wheelchairs may not be taken on the train unless the guest is disembarking at the Hotel, and then only personal strollers and wheelchairs can be accommodated. Whenever one is taken up the ramp, the platform should be informed via the intercom. Alertness is required as guests step onto the speedramp and elderly guests should be assisted if necessary.

Identification should be requested from anyone who enters the slide gate and is not recognized.

BACK PLATFORM POSITION. The operator at this position is responsible for keeping the ticket host posted of the space available on the platform. Guests stepping from the speedramp should be cautioned to watch their step and to move forward on the platform. Traffic must be kept moving smoothly at all times, but if it backs up, the speedramp should be stopped by pressing the button located at the base of the speedramp undercarriage. The ramp should never be started again until it is completely free of guests.

It is also the responsibility of the back platform operator to:

- Take strollers from guests and put them in the tailcone of the next train.
- Open the doors of the train after it has come to a complete stop by pushing the four automatic door buttons. Make sure all the doors open.
- Open the tailcone doors of the trains not designated as round trip.
- Direct guests toward the exit, making sure they do not go in the wrong direction.

The back loading gate should be opened after the guests who are exiting have passed it, and everyone along the rail has been cautioned to watch their fingers. The guests entering through this gate should be directed into the last car, with eight to ten in a compartment. When the last section is filled to capacity, the remainder should be sent to the third car.

After the guests are all out of the back section of



the waiting area, the gate is to be closed and the new group of guests coming up the speedramp should be asked to move forward on the platform.

The compartment doors are to be closed, using both hands and exercising care to make sure there are no fingers in the doors. The doors to the last car are to be closed first, and then the third car. It is essential for this operator to return to the speedramp as soon as possible to help keep the traffic moving smoothly. If any guests have not been accommodated, the operator at the turnstile must be informed in order to adjust the next load.



MIDDLE GATE POSITION. While the guests are waiting for the next train, the operator in this position is responsible for talking with the guests and answering any questions they might have.

Guests should be asked to move forward on the waiting platform, utilizing all available space.

This operator should stand by the middle gate as the train enters the station and, after all the doors

are open, direct guests toward the exit. As soon as the last guest passes the gate, it is to be opened, making sure the guests have been cautioned to watch their fingers along the rail. The guests are to be directed to the third car and the overflow to the second car. As soon as the guests are all out on the platform, the gate should be closed. Then, using both hands and making sure there are no fingers in the doors, the compartment doors are to be closed.

FRONT GATE POSITION. The operator in the front position has the responsibility of using the microphone to direct guests forward on the waiting platform. Also, any questions the guests might have should be answered.

This operator should stand by the front gate as the train enters the station, and after all the doors are open, direct the guests toward the exit. As soon as the last guest clears the gate, the guests on the waiting platform should be cautioned to watch their fingers as the gate is opened, and then directed to step around the guests exiting and board the front of the train. Any guests not accommodated should be directed toward the remaining vacant seats. This operator should move forward, closing doors so that the pilot can be in the train ready to go when the last door is closed. A double check should be made to see that all doors are securely closed. It is important to be aware of the location of the other trains so that if the foreman is busy, he can be notified that the train is ready to be dispatched.

HOTEL STATION

OPENING. The operator designated to open the Hotel Station in the morning should first pick up the keys in Operations and then report to Cash Control. From this point, the Hotel ticket seller and the operator board the Monorail scooter for the Hotel.

Once at the Hotel Station, the operator should:

- Unlock the main door and the ticket booth.
- Unlock the exit gate and the cabinet containing the radio.
- Give the keys to the ticket seller.
- Check the attraction signs at the foot of the stairs for applicable prices and Park operating hours.
- Set up the ticket box and turn the counters back to zero.
- Take opening readings on all four turnstiles and report the appropriate readings to the Main Gate and the Tomorrowland Station.
- Check with the ticket seller for the hand stamp of the day and turn on the ultraviolet light.
- Put the fire extinguisher out on the platform.

After making sure all the platform gates are closed, the operator should begin taking tickets and admitting the guests to the waiting area.

HAND STAMP POSITION. When the train arrives, the operator should be at the rear of the platform. As soon as the train completely stops, the buttons to open the doors are to be pushed, making sure all doors open. In a loud, clear voice, the operator should direct the guests toward the exit turnstiles. If possible, the tail cone door and one or two other doors can be closed before going to the turnstiles, but the guests should never be kept waiting.



To give hand stamps, the operator should:

- Unlock the exit turnstiles.
- Stamp only the left hand, rolling the stamp carefully to make a clear imprint.
- Answer all questions, but try not to hold up the line.
- Stand, back to the turnstiles, facing the guests and asking them to exit through both turnstiles.
- When necessary, refill the stamp pad with ink, being careful not to overfill it. A sloppy pad leaves a blurred imprint.

The tail cone of one particular train is usually reserved for round trips from the Hotel. Guests who have purchased round trip tickets should be helped on and off the train in a manner in which they do not mix with guests who have purchased regular admission. When the train comes into the station and stops, the operator should:

- Open the tail cone door and depress the buttons to open the doors of the first three cars.
- Tell the guests in the last car that these doors will be opened momentarily.
- Open the sliding door to the round trip waiting area and direct these guests to the tail cone.
- Open the doors to the last car and close the tail cone door.

From this point on, the operation is normal and should take no more time than loading the other trains.

TICKET POSITION. The Hotel Station is the first contact many guests will have with Disneyland, and it is this contact which helps set the stage for the show to come. If guests are treated here in a friendly, efficient manner, they will carry this feeling with them into the Park.

It is the responsibility of the operator taking tickets to take Main Gate admissions and Monorail tickets, being sure to give the return trip half of ticket back to the guest with an explanation of how it is to be used. Guests with "E" coupons must exchange them at the ticket window for a two-part Monorail ticket. Courtesy ride and courtesy admission tickets should be recorded on the CR and CA counters.

The operator should also:

- Check hand stamps for guests returning to the

Park, being sure to note the difference between Hotel and Main Gate stamps.

- Answer all questions and be ready to assist the ticket seller when necessary.
- Take the hourly count 15 minutes before the hour and call Main Gate and the Tomorrowland Station.
- Answer the P-line, but not ignore the waiting guests.
- Direct the round trip guests through the left turnstile and explain to them which train they will be on, where they will sit, and how long they will have to wait.

The sign on the ticket box should be put up when the train comes into the station and any waiting guests should be told they will be on the next train.

The ticket host should tell the operator on the front gate how much space is available in the last two cars and then help to load the train and close the doors.



FRONT OPERATOR POSITION. The front operator should always stay at the forward end of the platform unless needed to assist the ticket receptionist. Guests should be asked to move forward in the waiting area and their questions answered while waiting for the train.

When the train pulls into the station, the operator should:

- Scan the train to see which seats are empty and make sure all the doors are open.
- Direct disembarking guests toward the exit and hand stamp, taking note which compartments they vacated.
- Open the entrance gate and direct guests toward the empty compartments. Move down the train and call out available space to the pilot who will be at the gate. Signal the pilot when he is to close the gate and then explain to guests that the train is full and another one will be in momentarily.
- Close the doors on the train with both hands. After making certain that the platform is clear, and that all doors are securely closed, give the dispatch signal.

The dispatch time at the Hotel is extremely critical and must be maintained to keep the trains cycled properly. During a three-train operation, the train should be dispatched 45 seconds after the doors have been opened. Courtesy to the guests must never be sacrificed, though, to maintain dispatch time.

CLOSING. The operator designated to close the Hotel Station should do the following:

- Thirty minutes prior to the Park closing time, take the count and call it to the Main Gate. Discontinue hand stamps and inform all disembarking guests that if they wish to return to Disneyland they should remain aboard the train. Return the hand stamp and pad to the ticket seller.
- At approximately 10 minutes prior to closing time, check with the foreman as to which train will be the last one back to Tomorrowland.
- Lock the exit turnstiles.
- Pick up the keys from the ticket seller and lock the radio cabinet and the gate leading to the exit.
- Take the closing readings and call the count to

the Main Gate and Tomorrowland Station.

- Lock A and B turnstiles and place the ticket box inside the foyer so that the guests may exit between the turnstiles.
- Put the fire extinguisher away.
- Turn off the hand stamp lamp, lock the main entrance door and close the sliding glass door leading to the platform.
- Take the keys and the count sheet and board the last train with the ticket seller.

HAND SIGNALS

DISPATCH. The dispatch signal is to be given by the foreman in Tomorrowland and the operator in the front position at the Hotel. This signal is given by placing the hands in the shape of a "T."



HOLD. The hold signal is given when a person is in danger of injury or equipment is in danger of being damaged. It may also be given whenever the foreman deems it necessary to stop the train. This signal is given by holding the arm up with the fist clenched.



CHANGE POSITIONS. This signal is used to inform the pilot of the train to change positions with someone at the Hotel or in Tomorrowland. The signal is given by forming a "U" with the thumb and first finger and rotating the hand back and forth.



DOOR OPEN. This signal is given by the pilot of the train when he receives a red "door open" light. It is made by using the thumb and forefinger of both hands to form the shape of a circle.



SAVE. The save signal is given to the pilot of the train when entering the Tomorrowland Station to indicate that more room is needed at the Hotel Station. This signal is made by holding the wrist of one hand with one, two, or three fingers up to indicate the number of compartments needed.



DRIVE. This signal is given by the foreman to the operator designated to pilot the train. It is made by holding both hands in front of the body with fists clenched, and alternating the hands up and down.

SWITCHING TRAINS

ADDING A TRAIN. When planning to put another Monorail train into operation on the main line, the foreman must first send a pilot to the Train Storage Building to get the train. When the train is ready to come out, instructions are given to the pilots of the other trains as to where they should wait during the switching procedure. The foreman then calls the Train Storage Building to inform the electricians that the other trains on the line are holding in the proper positions.

The pilot who is to bring out the train must:

- Find out where to wait with the train while the beamway is being switched.
- Check the radio, and all gauges and switches to determine their working order.
- Wait for the signal to back up and when it is

received, acknowledge with three short honks on the horn.

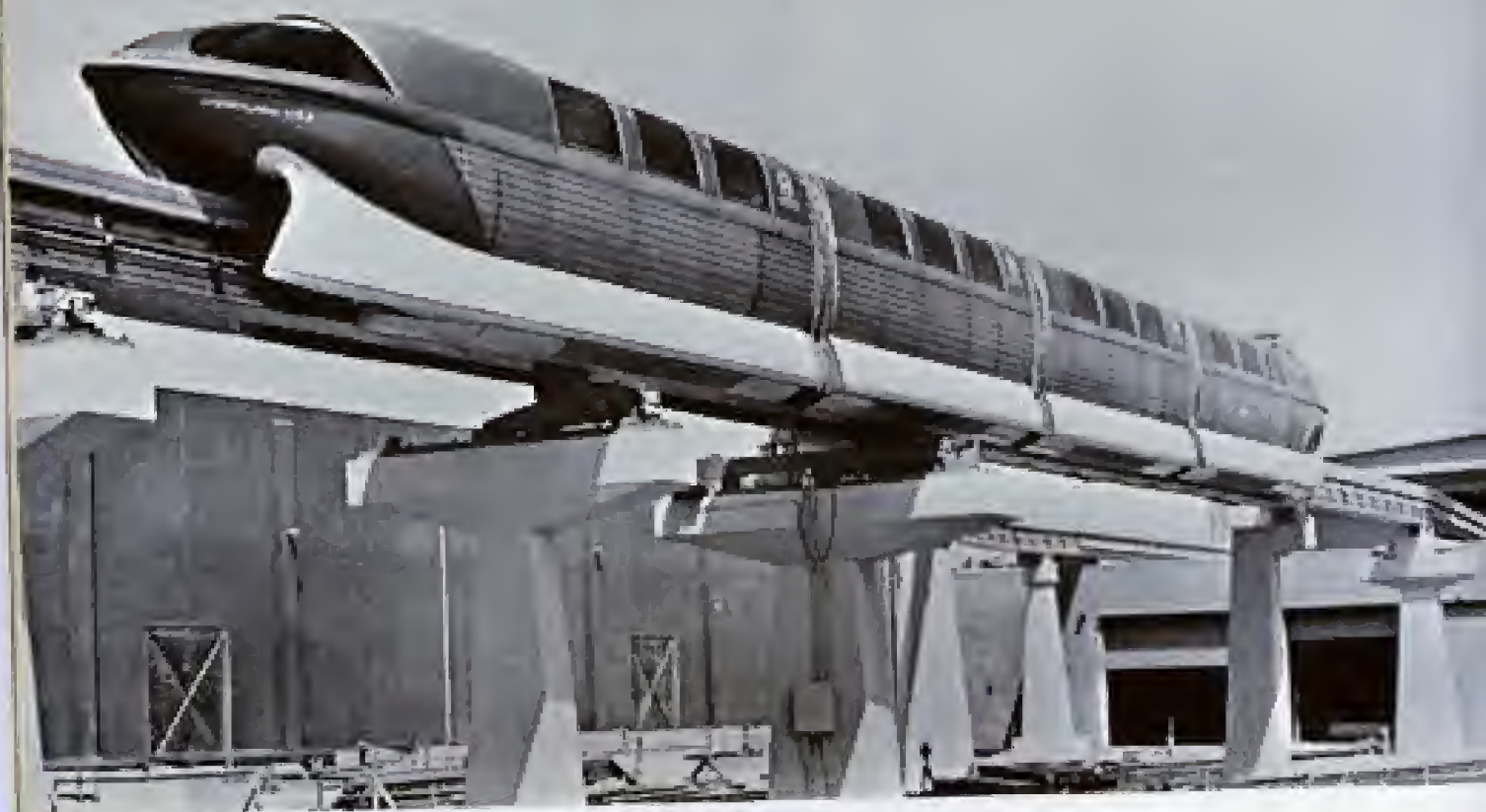
- Check the "door closed" and "ready" lights for green and the forward-reverse switch for reverse (amber light).

When the beamway has been switched to the spur line, the electrician at the switch will inform the pilot by radio that he is cleared onto the main line. The pilot should then acknowledge and back slowly (3 to 5 m.p.h.) out onto the main line.

The train should be stopped past the switch and the forward-reverse switch put in the forward position. The green light will then go on.

When the beamway is secured back to the main line, the electrician at the switch will inform the foreman that the track is cleared for normal operation. He will then signal the pilot to go ahead.





TAKING A TRAIN OFF. When planning to take a train off the main line, the foreman will call the Train Storage Building at the beginning of the last round trip prior to the deadhead trip. The pilot in the train being taken off will be told whether to hold at the switch or at the Hotel for clearance into the storage area.

It is the pilot's duty to:

- Radio when leaving Tomorrowland that the train is departing the Tomorrowland Station, dead-heading for the "shed" and will hold at the switch or Hotel.
- Radio the same information from the Hotel and again over Harbor Gate, giving the proper location

in the transmission.

If the pilot is told to hold at the Hotel, the foreman will radio him when it is clear to proceed. If he is to hold at the switch, the train must be stopped ten feet from the switch until clearance is received.

The pilot should then accelerate three m.p.h. over the switch and all the way into the Train Storage Building. A Monorail maintenance man will wave the pilot into the building with a flashlight and signal him where to stop. Once the Monorail is stopped and secured, the pilot must radio to all units concerned, that the Monorail is secured in the "shed."

The pilot is then to return to the Tomorrowland Station.

RADIO PROCEDURES

While driving the Monorail, a pilot's only link with Monorail Control is by way of radio. It is very important to be completely familiar with the procedures for its use.

Before making a transmission, monitor the channel by lifting the microphone out of its holder. If someone is on the channel, wait until after they have ended with "KC7032 clear" and then give your transmission. If you have to wait for the channel to be cleared in order to report your position, state, "This is a delayed transmission." If you are transmitting back and forth, end each segment with "Over."

The following is a list of radio codes you will use most often:

- 10-1 Receiving Poorly
- 10-2 Receiving Well
- 10-4 Acknowledge (OK)
- 10-9 Repeat
- 10-19 Return to Station
- 10-20 Your Location
- 10-22 Cancel or Disregard
- 10-23 Stand by

Operation of the two-way radio is governed by Federal Communications Commission rules which must be followed exactly.

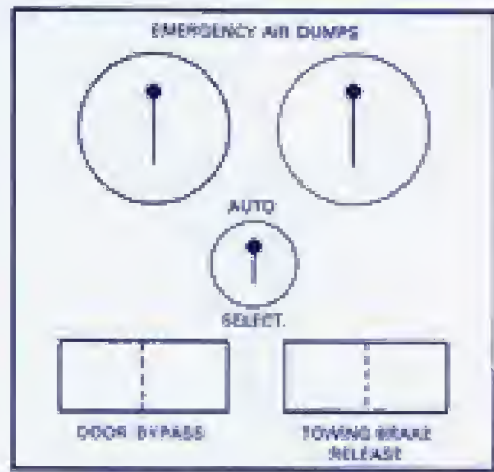
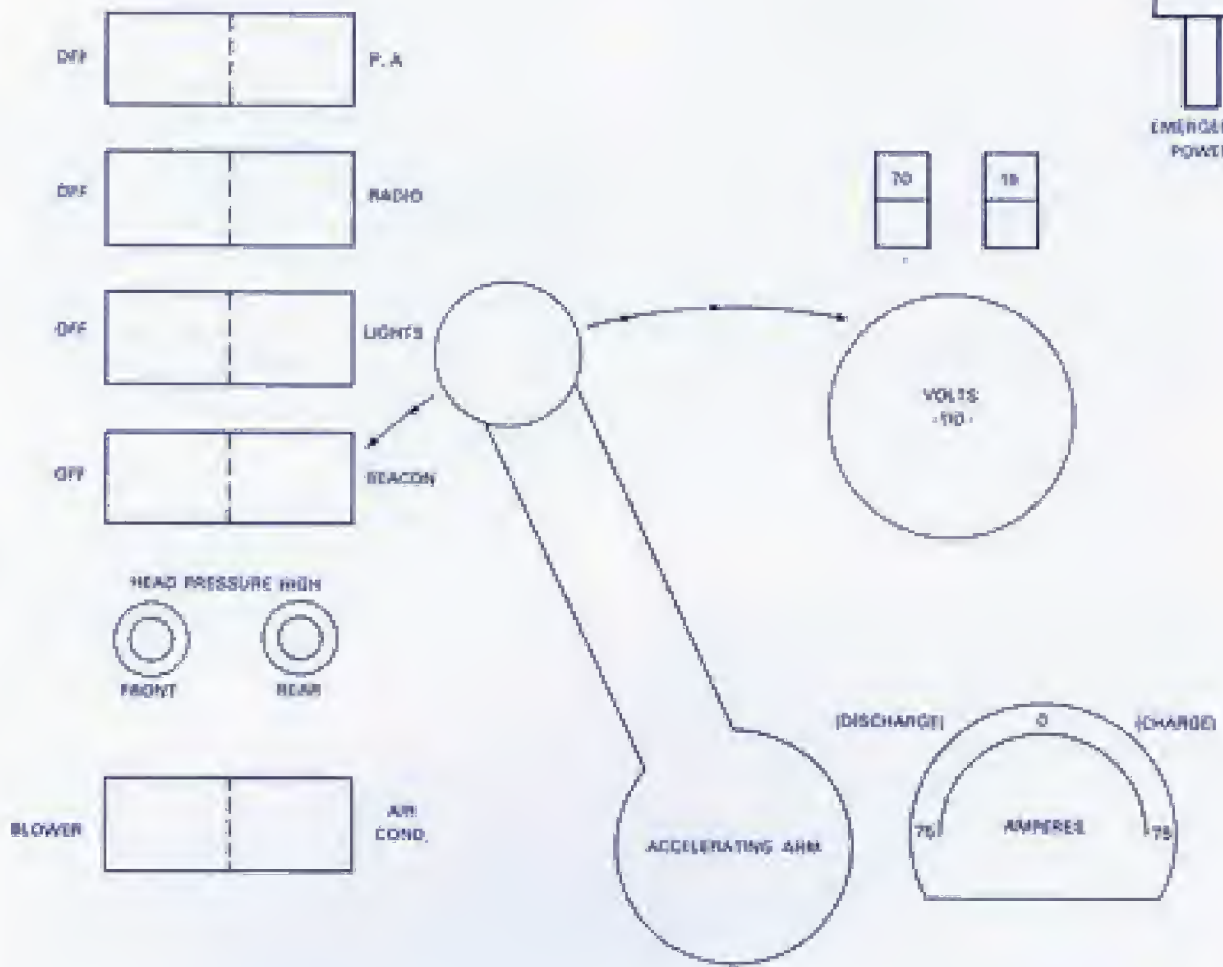
The F.C.C. maintains fixed and mobile monitors and can listen to any channel at any time.

Superfluous communications or signals, use of profane or obscene language and false or deceptive signals over the air are strictly prohibited.

Malicious interference or an attempt to jam another communication or interference with distress signals are also strictly prohibited.



SIDE NOSE CONE PANEL



EMERGENCY PROCEDURES

In the event that the Monorail stops on the main line, the pilot should radio Monorail Control and repeat three times, "Monorail (BLUE, RED, GOLD) emergency stop." The transmission is to be ended with, "My location is _____."

The pilot should then stop transmitting while Control and the other trains acknowledge. During a two or three train operation, the blue train acknowledges first, the red train second, and the gold train last. After acknowledging the emergency stop, they should give their location.

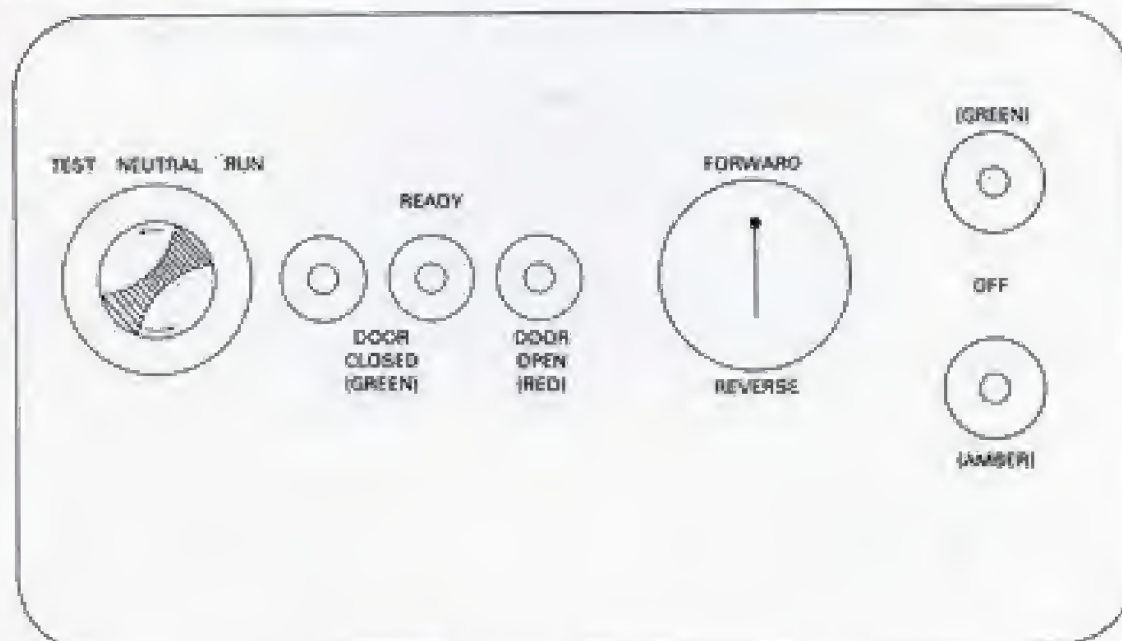
While waiting for instructions, the pilot in the incapacitated train should use the PA system to inform the guests that there has been a temporary power failure and the train will continue on in a few minutes. Guests in the tail cone should be told to open the window.

As soon as the other Monorail trains have acknowledged, the pilot is to turn off the lights, the air conditioning, the beacon and the PA system. The radio is the only accessory that is to be left on.

When asked by Control, the pilot should report:

1. The 110-volt meter reading. (This should read between 100 and 125 volts.) If the reading is below 100 volts and the amp meter shows discharge, the pilot will then be instructed to use the emergency power supply located in the upper right hand corner of the control panel.
2. The air pressure gauge reading. (The red hand indicating applied pressure should have no reading and the green hand indicating reserve pressure should read between 80 and 110 pounds.) If brake pressure has been automatically applied, the red hand should read approximately 22 lbs.
3. The position of both the 70 and 15 amp breakers. (They should both be all the way up.) If they have kicked out, they will be in the center position and to reset, they first have to be turned all the way off, and then on.
4. The test-run switch is in the run position. (The door bypass switch should be pushed on.)
5. There is either a green "door closed" light or a red "door open" light.
6. The forward-reverse switch is in the forward position.

FRONT NOSE CONE PANEL



TOWING PROCEDURE. Wait until the work tractor has hooked onto the train. Then, when signaled, put the test-run switch in the test position and push the towing brake release. If the brakes do not release, use the emergency air releases by pushing them all the way down. This should be done only when instructed to do so.

If the power failure occurs on a hill and the reserve air pressure in the train starts dropping, coast down the hill to a level position. Be sure Monorail Control is aware of this maneuver by radioing them first.

"DOOR OPEN" LIGHT. If the "door open" light comes on during a trip, the pilot should notify Control by radio and then stop the train on the nearest left turn or straight section of beamway. The test-

run switch should be put in the neutral position.

By lowering the window in the nose cone door, the pilot can check to see which door is ajar. Then by using the PA system he should ask an adult in each compartment to pull in on the doors. In almost every case the light will go out. If it stays on, the pilot should notify Control by radio and then proceed slowly into the next station.

GUEST INJURIES. All injuries must be reported to the foreman so that a report can be made. If the guest is unable to move, call First Aid. If the injury is minor, the guest should be asked if he wishes to go to First Aid. If he does, an operator will accompany him.

Employee injuries must also be reported to the foreman.

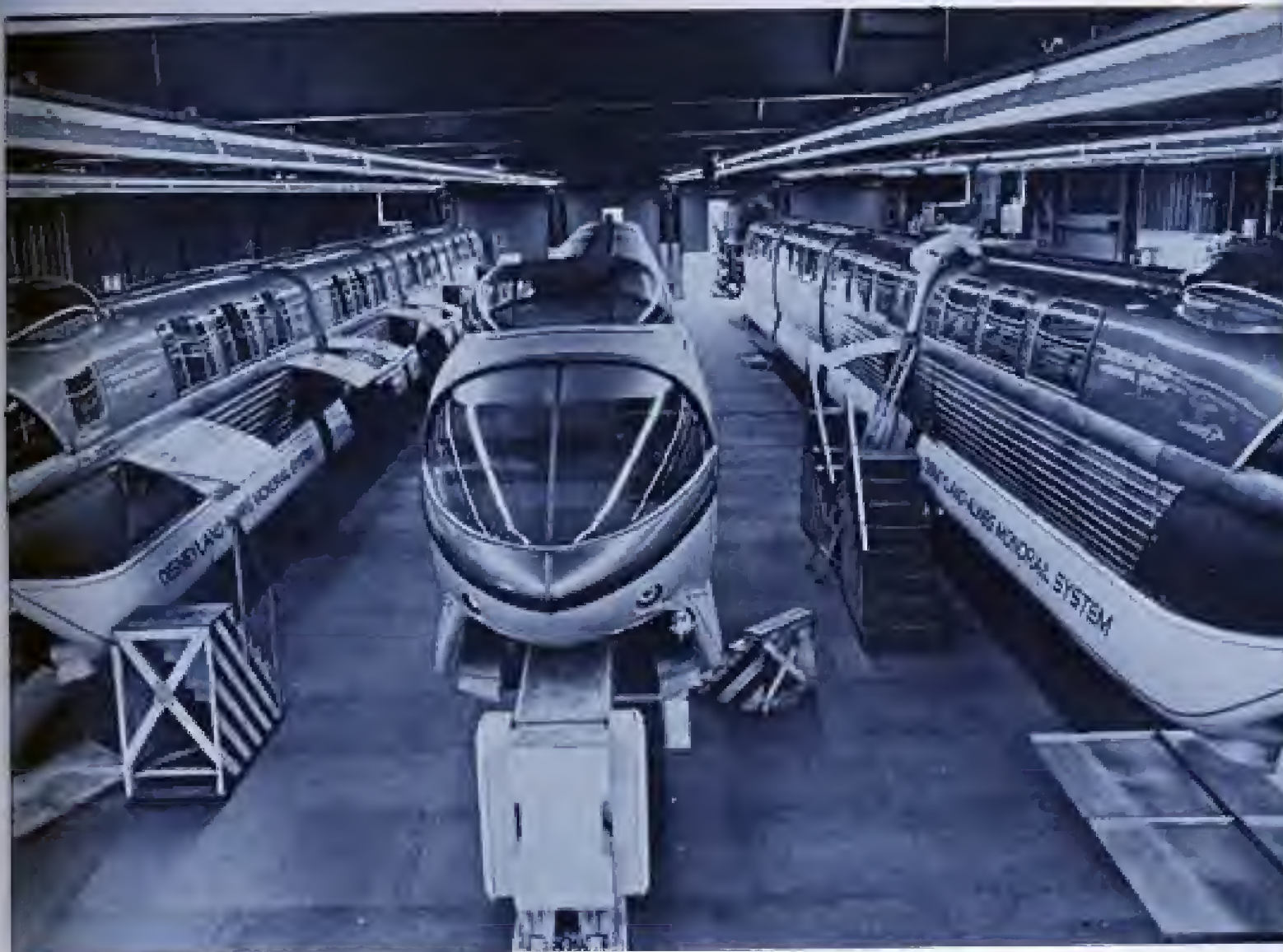
In Conclusion

The Disneyland-Alweg Monorail System is an interesting and exciting attraction. Your knowledge of the Monorail and your constant attention to the responsibilities of your assignment are of vital importance.

It is essential that you know your duties and how they fit in with others of the crew to make a smooth, efficient working team. How you act and how you greet each guest are of great importance to the show.

We are always ready to answer any questions you might have or listen to any suggestions that will help make a better operation of the attraction possible.

RETLAW SUPERVISION



DISNEYLAND-ALWEG MONORAIL SYSTEM FACT SHEET

OPENING DATE: June 14, 1959.

REOPENING: June, 1962.

TOTAL LENGTH: 12,300 feet — almost 2½ miles.

NUMBER OF TRAINS: Three.

TOTAL INVESTMENT: \$3,300,000.

SEATING CAPACITY: 108 passengers per train.

POWER FROM TRACK: 600 DC volts.

MOTORS IN TRAIN: Four 55 horsepower motors.

LENGTH OF TRAIN: 110 feet.

HEIGHT OF BEAMWAY: Lowest point — 5 feet; highest point — 31 feet; average height — 20 feet.

LENGTH OF BEAMS: 32 feet to 60 feet.

DESIGN STRENGTH OF BEAMS: 5,000 pounds per square inch.

TIRES USED IN TRAINS: Pneumatic rubber tires (960 per train).

TRIPS PER HOUR WITH THREE-TRAIN OPERATION: 19.5.

THEORETICAL HOURLY CAPACITY: 2,100.

LENGTH OF TOMORROWLAND LOADING PLATFORM: 100 feet.

LENGTH OF HOTEL LOADING PLATFORM: 112 feet.

TRIP TIME: 6 minutes and 45 seconds.

CYCLE TIME: 9 minutes and 20 seconds.

MANPOWER: One shift during peak operation — 13.

GLOSSARY OF MONORAIL TERMS

ACCESS DOOR: A door located in the under part of the train, used to gain access to the under workings of the train.

ALWEG: Derived from the initials of its originator, Dr. Axel L. WENNER-GREN.

BEACON: The amber revolving light located behind the dome on the first section of the train.

BEAMWAY: Pre-cast I-Section girders which are elevated and serve as track, carrying beam and guide rail.

BELLOWS: The accordion-like covering between the cars used to cover the bogie units.

BOGIE UNIT: The complete drive assembly that straddles the beam in such a way that the drive and supporting wheels run on the top surface of the beamway, and the guiding and stabilizing wheels contact both lateral surfaces of the beam.

BUS BAR: The metal strip located on the right side of the beamway supplying power to the train.

CATWALK: A narrow walkway on top of the cars.

DEADHEAD: A train traveling without passengers.

DEAD MAN CONTROL: Automatic control which an operator must hold in an ON position against a spring. If he loses consciousness or is hurt, it is automatically released and the power is cut off.

DISPATCH: The signal given to send out the train from the station.

DOME: The transparent enclosure over the Monorail Pilot Control.

DYNAMIC BRAKING: Braking the speed of the train without the use of air.

INTERCOM: A two-way communication system with a microphone and a loudspeaker at each position for localized use. At the Tomorrowland Station there is an

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intercom located on the console, one on the rear platform, and one on tickets.

MOTOR METERS: The two meters measuring the amperage used by the motors; each meter measuring two motors.

NEUTRAL POSITION: The position of the accelerator arm when it is not in use.

NOSE CONE: The enclosed section constituting the forward end of the train.

OVER-SPEED SYSTEM: An electronic device used to prevent speeding.

PADDLE: The small, round signs extending from the left side of the beamway, indicating the speed zones.

P-LINE: A direct communication line between two telephones, requiring no dialing.

PA SYSTEM (Public Address): A device including a microphone and loudspeakers used for broadcasting mes-

sages through the trains.

PYLON: The concrete supporting posts used to hold up the beamway.

RECTIFIER: (Inside-Outside)— A device for converting alternating current into direct current.

STATION: Any scheduled stop along the beamway where passengers board.

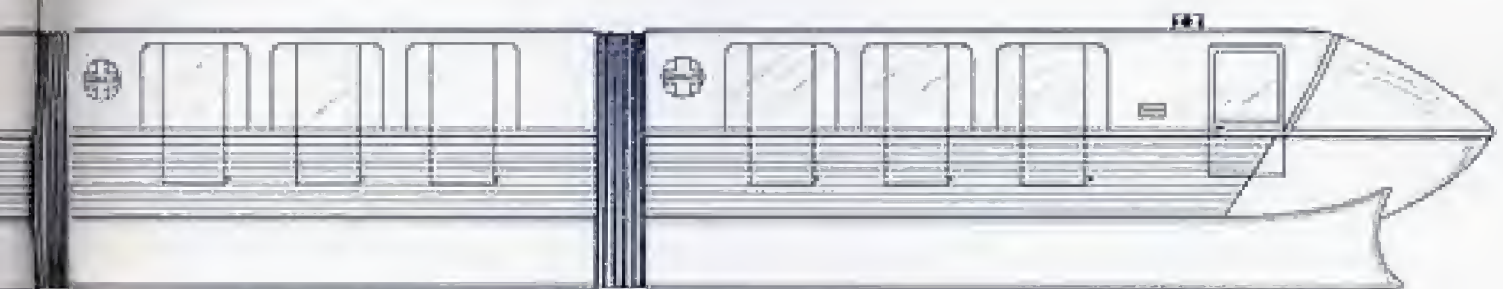
TAIL CONE: The enclosed section constituting the rear end of the train sometimes used for round trips.

TRAIN STORAGE BUILDING: The servicing and storage area for the trains.

VOLTMETER 600 DC: The meter which measures the DC voltage used by the train.

VOLTMETER 110: The meter which measures the conversion of power from the track to the train.

WORK TRACTOR: The diesel-powered unit used for towing Monorails and working on the beamway.



34 8000

34 8000
(Other Cars, Motor)

34 8000

